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REMARKS

Summary of the Office Action

As indicated in the Office Action dated January 23, 2007, Claims 1-61 have been finally rejected. The following rejections are made in the Office Action dated January 23, 2007:

- Claims 1-4, 10-14, 17, 26-27, 30, 39, 48, 52, and 61 are rejected under 35 U.S.C. §102(e) as being anticipated by U.S.P.N. 6,258,577 to Goodrich ('577).
- Claims 5, 8, 18, 28-29, 31, 40, 50-51 and 53 are rejected under 35 U.S.C. §103(a) as being unpatentable over Goodrich '577 as applied to claims 4, 17, 26, 39, 48 and further in view of U.S.P.N. 6,454,937 to Horton ('937).
- Claim 6 is rejected under 35 U.S.C. §103(a) as being unpatentable over Goodrich '577 as applied to claim 4 and further in view of U.S.P.N. 6,587, 575 to Windham ('575).
- Claim 7 is rejected under 35 U.S.C. §103(a) as being unpatentable over Goodrich '577 as applied to claim 4 and further in view of U.S.P.N. 5,931,557 to Danilychev ('557).
- Claims 9, 15-16, 19-25, 33, 35-38, 41-47, 49, 55, 57-60 are rejected under 35 U.S.C. §103(a) as being unpatentable over Goodrich '577 as applied to claims 4, 14, 1, 17, 39, 48 and further in view of U.S. Pub. 2003/0045868 to DiStefano ('868).
- Claims 32 and 54 are rejected under 35 U.S.C. §103(a) as being unpatentable over Goodrich '577 in view of Horton '937 as applied to claims 28 and 50 and further in view of U.S.P.N. 4,705,498 to Goss ('498).

Claims 1, 39, and 61 are currently amended. Claims 18 and 40 are being canceled.

Therefore Claims 1-17, 19-39, and 41-61 are currently pending. Applicant respectfully traverses

Examiner's rejections and respectfully requests reconsideration in light of the amendments above, and the arguments set forth below.

I. Substantive Rejections Under 35 U.S.C. §102(e)

Examiner has rejected Claims 1-4, 10-14, 17, 26-27, 30, 39, 48, 52, and 61 under 35 U.S.C. §102(e) as being anticipated by U.S.P.N. 6,258,577 to Goodrich ('577).

35 U.S.C. 102(a) states:

A person shall be entitled to a patent unless—

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by applicant for patent....

35 U.S.C. 102(e) states:

A person shall be entitled to a patent unless—

(e) the invention was described in (1) an application for patent, published under 122(b), by another filed in the United States before the invention by the applicant for patent....

In order for a reference to act as a §102 bar to patentability, the reference must teach each and every element of the claimed invention. *Kalman v. Kimberly-Clark Corp.*, 713 F.2d 760, 771 (Fed. Cir. 1983). Independent Claims 1, 39 and 61 are currently amended to add limitations not disclosed by Goodrich '577. Currently amended Claim 1 requires, *"wherein the blood purifier includes a housing, the housing being UV reflective."* Currently amended claim 39 requires *"wherein the housing is UV reflective."* Finally currently amended Claim 61 requires *"the blood purifier including a delivery device wherein the delivery device is a vertical riser configuration (VRC), moving the blood at a predetermined rate toward the UV light output*

thereby producing an increasing UV dose within the blood as it approaches the light output."

Examiner expressly stated Goodrich fails to teach the housing is UV reflective and fails to teach the delivery device is vertical riser configuration. (Official Office Action dated January 23, 2007, pg.5). Accordingly, Applicant respectfully requests withdrawal of the 102(e) rejection with respect to claims 1, 39, and 61. Claims 2-17, 19-38, and 41-60 depend from currently amended independent claims 1 and 39, therefore any 102(e) rejection with respect to the dependent claims should be withdrawn as well.

II. Substantive Rejections Under 35 U.S.C. §103(a)

A. Horton U.S.P.N. 6,454,937 Should be Disqualified as Prior Art Under 35 U.S.C. §103(c)

Applicant would like to draw Examiner's attention to Horton U.S.P.N. 6,454,937. Applicant submits Horton '937 qualifies as 102(e) art. Therefore, Applicant respectfully asserts Horton '937 should be disqualified as prior art under 35 U.S.C. §103(c) on the basis the current Application 10/008,224 and U.S.P.N. 6,454,937 were, at the time the invention of Application 10/008,224 was made, commonly owned by Remote Light the assignee. Applicant has herewith filed a Terminal Disclaimer in compliance with 37 CFR 1.321 to address this. Accordingly, Applicant respectfully requests withdrawal of the present rejections to Claims 5, 8, 18, 28-29, 31, 40, 50-51 and 53. Examiner is requested to contact the undersigned if the Examiner has any questions concerning this issue.

B. Arguments for Patentability

Applicant asserts the UV disinfection blood purification system according to the present invention is substantially different from those described in the references cited and relied upon by the Examiner.

Goodrich '577 discloses a method of adding an effective amount of photosensitizer to a fluid to be decontaminated, and then irradiating the fluid with a sufficient amount of photoradiation to activate the photosensitizer to react with the microorganisms in the fluid such that the microorganisms are inactivated. (Goodrich '577 col. 10, ll. 20-25) Goodrich '577 teaches that the activated photosensitizer is capable of inactivating the microorganisms by interfering with the binding to nucleic acid in the microorganisms to prevent their replication. (Goodrich '577 col. 7, ll. 29-31) In fact, Goodrich '577 teaches away from Applicant's invention in that the chemistry between the photosensitizers and nucleic acids proceeds via direct sensitizer-substrate interactions, and that the photosensitizer does not produce large quantities of singlet oxygen upon exposure to UV light, but rather exerts its effects through direct interactions with nucleic acid substrates through electron transfer reactions with the excited state sensitizer species.

Goodrich '577 is unlike Applicant's invention that decontaminates blood directly via a UV lamp source, without the use of photosensitizers additives. In Goodrich '577 the photosensitizer additives are responsible for the decontamination of microorganisms in the fluid as discussed above, whereas Applicant's invention decontaminates blood with UV light output, and without the need for photosensitizers additives. Goodrich '577 does not teach decontamination of blood with UV light with a wavelength approximately between about 250 to about 260 nm, but requires additives to achieve effective decontamination. Applicant's

invention eliminates the need for such expense additives, and furthermore provides a system that does not require a removal or purification step after decontamination to remove additives from the fluid as required by Goodrich '577.

Even if Examiner believes Goodrich '577 does not teach away from Applicant's invention, in addition to the reasons discussed above, Applicant believes Goodrich '577 cannot be properly combined with the remaining cited references.

Applicant asserts Goodrich '577 cannot be properly combined with Windham '575 because there is not suggestion or motivation to modify or combine the teachings of both references. Windham '575 discloses a device detector that uses algorithms for identifying contaminants for determining contamination of animal carcasses. Windham '575 only discloses screening for food contaminants, but provides no disclosure of a system or method of removing the contaminants. Consequently, it would not be possible to combine the teachings of Goodrich '577 that are directed to the removal of contaminants from blood with the teachings of Windham '575 that are directed only to the screening and detection of contaminants. Even if Goodrich '577 and Windham '575 could be combined, which Applicant believes they cannot, the combined references still fail to teach each and every element of currently amended claims 1, 39 and 61.

Applicant also disagrees with Examiner's assertion that Goodrich '577 can be properly combined with Danilychev '557. Applicant asserts there is not suggestion or motivation to modify or combine the teachings of both references. Danilychev '557 discloses a microwave powered UV and/or visible light producing system comprising a housing defining a cavity in which materials can be placed for illumination of photosensitive materials, UV-visible curing, solidifying or hardening of polymer coatings or sterilizing medical materials and instruments.

Clearly the system of Danilychev '557 could not be combined with Goodrich '577 that discloses the blood product line is joined by the photosensitizer at a controlled flow rate. The flow rate is selected to ensure decontamination occurs in the decontamination cuvette. The decontamination cuvette is connected via a light guide to a photoradiation source that is adjacent to a photoradiation enhancer. The flow rates of the entire system of Goodrich '577 are variable for optimal operation based on the amount of light energy intended to be delivered to the sample. Therefore, an important feature of Goodrich '577 is the ability to control the flow rates of the entire system based on the necessary amount of light energy. Thus, a traditional microwave cavity as disclosed by Danilychev '557, which does not permit or take into consideration control of flow rates as taught by Goodrich '577 during exposure to photoradiation, could not be combined with Danilychev '557. Once again, even if Goodrich '577 and Danilychev '557 could be combined, which Applicant believes they cannot, the combined references still fail to teach each and every element of currently amended claims 1, 39 and 61.

Applicant asserts DiStefano '868 cannot be properly combined with Goodrich '577 because DiStefano '868 clearly discloses an apparatus for destroying pathogens in the venous blood of a patient, or in vivo. DiStefano '868 discloses an apparatus for exposing blood to UV light while the blood is still in the patients. In DiStefano '868, a needle is inserted into a vein, and a saline solution bathes the tip of the needle. An optical fiber passing through the needle carries UV and visible light alternatively to the patient's venous system to kill pathogens in the venous system. Thus, DiStefano's *in vivo* system could not be combined with an *in vitro* system such as Goodrich '577 in which the blood to be decontaminated is outside the body. As such, Applicant believes DiStefano '868 cannot be properly combined with Goodrich '577. Even if Goodrich '577 and DiStefano '868 could be combined, which Applicant believes they cannot,

the combined references still fail to teach each and every element of currently amended claims 1, 39 and 61.

Finally, Applicant asserts that the combination of Goss '498 and Goodrich '577 fail to teach each and every element of currently amended claims 1, 39 and 61.


Claims 1-17, 19-39, and 41-61 are asserted to be in patentable condition. Allowance of these claims is hereby respectfully requested. In the event the Examiner finds additional minor modifications that would place these claims in allowable condition, the Examiner is respectfully requested to make telephonic contact with the Applicant to discuss and make changes via Examiner's Amendment to place the claims in condition for allowance.

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CONCLUSION

The Office Action of January 23, 2007, has rejected Claims 1-61 under 35 U.S.C. §102(e) and 35 U.S.C. §103(a). The amendments and remarks of Applicant address these rejections. Applicant has currently amended independent Claims 1, 39, and 61. Applicant cancels Claims 18 and 40. Applicant also respectfully asserts Horton '937 should be disqualified as prior art. Accordingly, Applicant believes Claims 1, 39, and 61 are in condition for allowance. Claims 2-17, 19-38, and 41-60 depend from independent Claims 1 and 39 merely adding further limitations to the allowable claims, therefore these claims should also be considered allowable. Reconsideration of the pending rejections is respectfully requested, and a notice of allowance is respectfully sought.

Respectfully submitted,



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